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‘Food allergy? Ask before you eat’: Current food allergy training and future training needs in foodservice

Abstract

The incidence of allergic reactions to food occurring in eating out situations is becoming increasingly prevalent amongst susceptible consumers. Previous studies repeatedly identified food allergy knowledge gaps among foodservice staff. This highlights the importance of food safety and food allergy training in foodservices to minimise risk of food allergic reactions. This study aims to determine the current food allergy training practices, challenges and future food allergy training needs of foodservices in England. A postal survey was conducted among 500 foodservice operators in North West England. The questionnaire is divided into 5 sections: (i) demographics; (ii) current food allergy training practices; (iii) importance of food allergy training topics; (iv) challenges faced by restaurants when training foodservice staff; and (v) future food allergy training. Out of the 30 restaurants, only one restaurant did not carry out food allergy training. More than 70% of the restaurants frequently trained newly hired staff and whenever changes or updates occurred in the food hygiene regulations (60%). Most of the training were on-the-job training and took between 1 – 2 hours to complete. Identification of food allergens in menu, prevention of cross contact and communication were identified as the most important topics in food allergy training. High staff turnover and lack of time contributed to the difficulty in training foodservice staff. There was considerable interest in the types of future food allergy training and most preferred on-site training by authorised staff or training at local councils. Further work is needed in the evaluation of future food allergy training needs to develop effective training materials and delivery methods to ensure the safety of food allergic individuals.

Keywords: challenges; communication, food allergy, online training, on-site training, restaurants

Highlights:

- Most food allergy training was conducted using a one-to-one, on-the-job training approach
- High staff turnover and lack of time contributed to the difficulty in training foodservice staff
- Communication, prevention of cross contact and identifying food allergens were key topics
- Restaurants felt that the responsibility for food allergy training lay with the local council
- Face-to-face or on-site training was preferred to online learning

Introduction

Up to 20% of fatal anaphylactic reactions in England and Wales occurred in eating out situations. Out of the 124 deaths attributed to the consumption of food allergens in 1992 to 2012, 25 fatalities happened in restaurants (Turner et al. 2015). A US study conducted by Wanich, Weiss, Furlong, & Sicherer (2008), highlighted that of the 294 respondents recruited, 34% experienced at least one

food allergic reaction at a restaurant. Likewise, in another study conducted by Weiss and Munoz-Furlong (2008), it was further highlighted that almost 50% of fatal food allergic reactions over a 13-year period, were caused by foods consumed at multiple different restaurants. A recent example exemplifies such fatal reactions.

The Byron Burger death inquest was featured in the UK news in September 2019. Owen Carey, an 18 year old boy, died from a fatal reaction upon eating a dish marinated with buttermilk. Carey told staff about his milk allergy and checked the menu. The menu did not mention anything about marinade in his dish, hence was reassuring to Carey that his order did not contain milk. It is a legal requirement for allergy information to be made available and signage supporting this to be visible in a catering environment. At the bottom of the Byron menu, allergy information were provided but in very small font, with black print on a royal blue background (BBC, 2019). So, what happened during the communication between Carey and the staff? Do frontservice staff communicate with kitchen staff if unsure of a particular menu? Are staff trained appropriately in food allergy and food allergen management training? Much research supports the increased likelihood of being exposed to food allergens when eating outside of home (Radke et al., 2016; Barnett, Begen, Gowland, & Lucas, 2018; Ortiz et al., 2018; Soon, 2018). Each year in the UK, 10 patients die from food-induced anaphylaxis (FSA, 2020). Peanuts are one of the top 10 foods responsible for the majority of food allergies in the United Kingdom (UK). Other major food allergens include milk, eggs, tree nuts, fish and shellfish (NHS, 2019). Recent fatalities due to presence of food allergens in commercial meals underscore the importance of food allergy knowledge and practices among foodservice staff (BBC, 2018; BBC, 2019).

Numerous studies on food allergy knowledge, attitude and practices among food handlers have been carried out. Studies such as those conducted in Turkey (Sogut et al., 2015), US (Dupuis et al., 2016; Lee & Sozen, 2018), UK (Bailey, Albardiaz, Frew, & Smith, 2011; Common et al., 2013) found food allergy knowledge gaps among restaurant workers. In Sogut et al. (2015), out of 351 staff who responded, only 54.3% were able to recognise at least 3 food allergens and 12.1% gave correct answers to the true and false food allergy knowledge questions. Only 17.1% of the staff received food allergy training (Sogut et al., 2015). Dupuis et al. (2016) found that the majority of the restaurant employees (53.7%; n=187) could only name up to one preventive measure in reducing risk of food allergy. Only one in six restaurant workers correctly identified the two most important steps when responding to an anaphylactic reaction (i.e. administration of epinephrine and calling the emergency helpline) (Dupuis et al., 2016). In Lee and Sozen (2016), 36.7% (n=229) had received food allergy training in the past year while 20% received the training when they were newly hired. Most foodservice employees were not trained in food allergy, although they expressed interest to participate in such training (Lee & Sozen, 2016). Common et al. (2013) also found that although the majority of restaurant staff (90%; n=80) received food hygiene training, only 15% received food

allergy training. In McAdams, Deng, & MacLaurin, 2018 and Radke et al. (2016), the studies revealed that most participants were knowledgeable about food allergies and appreciated their role in providing safe food to consumers. However, the participants expressed a lack of food allergy risk management resources and training (MacAdams et al. 2018). Participants' food allergy knowledge was acquired through informal one-to-one sessions, generic food safety training and first-aid courses rather than programmes tailored to food allergy training (McAdams et al., 2018). A face-to-face food allergy training programme was conducted among restaurant staff in the UK and the study reported an increase on participants knowledge of food allergy from 82% (before training) to 94% (post-training) (Bailey, Kindratt, Smith, &fare Reading, 2014). Although the number of participants were low (n=11), Bailey et al. (2014) identified that face-to-face training may be difficult for foodservice staff to attend due to the opportunity costs for the restaurant and staff's time. Bailey et al. (2014) also suggested that online food allergy training is an alternative and could potentially reach wider audience especially among workers working outside the standard hours. The Food Standards Agency UK (FSA) has developed an interactive food allergy training that is targeted primarily for local authority enforcement officers but is freely accessible for anyone interested (FSA, 2019). The online training would clearly benefit restaurant managers and owners and could be used as materials to train their staff.

The above studies identified clear food allergy knowledge gaps among restaurant workers and highlighted the need for greater training of foodservice staff. The Byron Burger incident further reiterates to what extent food allergy training are provided to foodservice staff. Thus, this study aims to determine the current food allergy training practices, challenges and future food allergy training needs of foodservices in England.

Methodology

The questionnaire was constructed and divided into sections: (i) demographics; (ii) current food allergy training practices; (iii) importance of food allergy training topics; (iv) challenges faced by restaurants when training foodservice staff; and (v) future food allergy training (available in supplementary material). A pilot study was conducted at the author's university canteen to ensure clarity and suitability of wording. The study was reviewed and approved by the university's Science, Technology, Engineering, Medicine and Health (STEMH) ethics committee (STEMH 840). Five hundred foodservice operators based in north-west of England were contacted using the FSA's food hygiene ratings advanced search options. Specific seach terms such as 'Restaurants' under 'business type' and 'cities or large towns' based in local authorities of the five counties (Cheshire, Merseyside, Greater Manchester and Lancashire) were selected. Systematic sampling using the FSA hygiene rating list was carried out to ensure restaurants with hygiene ratings of 0 – 5 stars were selected. The breakdown of restaurants according to hygiene ratings assigned by FSA were as follow: 5 stars (n=311), 4 stars (n=106), 3 stars (n=54), 2 stars (n=15), 1 star (n=13), 0 (n=1). The restaurants were sent a postal

survey containing the study information sheet, consent form, questionnaire and a postage paid return envelope. Restaurant managers, owners and supervisors were invited to participate in the study and were asked to return their signed consent form and the questionnaire.

Results

Thirty restaurants participated in the study. All participating restaurants indicated a hygiene rating of 5 (very good hygiene standards). Most of the respondents were owners (56.7%) of the restaurants and 50% of the participants had more than 5 years of working experience in the current restaurant. Half of the participants had patrons with food allergies visiting their restaurants. More than 85% of the restaurants cater to food allergic and intolerant customers whilst one restaurant was in the midst of planning to cater to food allergic customers (Table 1).

Insert Table 1 here

Out of the 30 restaurants, only one restaurant did not conduct food allergy training. The same restaurant reported that the training was only conducted when a complaint was received. More than 70% of the restaurants trained newly hired staff and whenever changes or updates occurred in the food hygiene regulations (60%). Whilst 26.7% and 23.3% trained the staff annually or when changes had been made to the menu, change of suppliers and raw materials. The Most training was on-the-job training and took between 1 – 2 hours to complete. 36.7% were trained in using adrenaline auto-injector whilst 20% believed that the procedure should be included as part of the food allergy training (Table 2).

Insert Table 2 here

Topics in food allergy training

The top three topics that were ranked as most important by the majority of the restaurants (66.7%) were identification of food allergens in menu, avoiding cross contact and communication with customers about food allergies. Although the identification of the 14 main food allergens were deemed important (60%), nevertheless, some of the restaurants may not be using all or most of the 14 food allergens. Communicating with other kitchen staff about food allergies (56.7%), responding to a food allergic reaction (53.3%), reading ingredient list (50%) and recognising symptoms of food allergic reactions (50%) were ranked lower by half of the participating restaurants.

Types of challenges faced by restaurants when training foodservice staff

High staff turnover rate (58.4%) and lack of time (57.7%) remain the most challenging issues faced by foodservices, followed by lack of technical expertise (48%), keeping up to date with food regulatory requirements (46.2%), lack of interest from staff (32%) and language barrier (26.9%).

Food allergy training and future interests

Most of the participants were aware of the free online food allergy training provided by FSA UK and 40% of them had taken advantage of the online training. Those who did not participate provided reasons such as the following:

> *Participant 8: I'm confident in delivering food safety and allergen management training.*
>
> *Participant 17: I have sufficient knowledge within the company to provide my own training.*
>
> *Participant 23: We did not attend FSA training because we have external staff conducting the training.*

Most restaurants (86.7%) were motivated to learn more about food allergy training and prefer to receive on-site training (66.7%) or free food allergy training at local councils (60%) (Table 3).

Insert Table 3 here

Discussion

Food allergy training topics

Identification of food allergens in menu, prevention of cross contact and communication were identified as the most important topics in food allergy training. The ability to identify food items that contain food allergens can impact the safety and dining quality of food allergic and intolerant customers. One of the factors leading to Owen Carey's death may have been caused by a lack of awareness that the ordered dish contained milk (BBC, 2019). Avoiding cross contact with food allergens such as milk whilst preparing a milk-free dish is key to avoiding allergic reactions to food.. Food allergens could be inadvertently transferred to other food products that do not contain the allergens, equipment or surfaces (FARE, 2019). Previous news reports had highlighted the higher likelihood of cross contact at foodservices resulting in serious threats to individuals with food allergies (Marsh, 2018; Morgan, 2018; Ward, 2019). Radke et al. (2016) identified that few restaurants had dedicated equipment for preparing allergen-free meal thus increasing the likelihood of potential cross contact. Whilst foodservices provide a means of convenience for consumers, foodservices are often faced with constraints such as limited kitchen space, sharing of equipment, and time constraints thus highlighting the ease through which cross contact of food allergens can take place (Soon, 2018). Previous studies also reveal that communication of dietary requirements is the responsibility of consumers (Lee & Sozen, 2018; Soon, 2018; Wen & Kwon 2019). Wen & Kwon (2019) further reported that the majority of foodservice staff had never or seldom asked customers if they had any

food allergy. Consumers need to be vigilant and should clearly communicate their food allergies and dietary requirements to staff or request to speak to the chefs. Barnett, Vasileiou, & Lucas (2020), Kwon & Lee (2012) and Leftwich et al. (2011) revealed that failures in communication between consumers and staff had led to a significant number of food allergic reactions whilst eating out. This study reiterates Pratten and Towers (2004) who identified communication as a key problem between customers and frontservice staff.

Challenges in food allergy training

High staff turnover and lack of time contributed to the difficulty in training foodservice staff. High employee turnover has always been a challenge in the food and hospitality sector (Goh & Okumus, 2020; Goh & Lee, 2018). Lack of career opportunities (Stamolampros, Korfiatis, Chalvatzis, & Buhalis, 2019), job burnout, having a young and often transitory workforce (Lu & Gursoy, 2016) and long working hours (Butler, & Hammer, 2018) had been identified as important predictors of employee turnover. Foodservice workers are also more likely to leave their positions than to raise the issues with their current employer (Kik et al., 2019) and have often viewed the foodservices as stopgap until better opportunities came along (Butler, & Hammer, 2018). As working hours are long and demanding, this has led to very little time committed to training. For example, Witts (2017) identified that more than 1 in 10 chefs in London work for more than 60 hours per week while managerial staff who had been contracted to work for 44 hours per week were actually spending up to 70 hours in the fast food restaurant sector (Butler, & Hammer, 2018). The lack of time to conduct training in foodservices is mirrored in the food industry where the biggest barrier to food safety training is the inability to schedule time for training. A Global Food Safety Training Survey revealed that more than 450 food and drink producers worldwide (out of 649) struggled to find time to train their employees in food safety practices (Food Safety News, 2013).

Future food allergy training

There was considerable interest in the types of future food allergy training and most preferred on-site training conducted by authorised staff or training at local councils. The participating restaurants felt that the responsibility for food allergy training lay with the local council. This mirrors Pratten and Towers (2004) findings where the majority of the interviewees suggested that the training responsibility lies with the Department of Environmental Health. Contrary to expectations, this study revealed that face-to-face or on-site training was preferred to online learning. A possible explanation for this result is that foodservices rely on practical, hands-on skills to ensure the preparation and sale of safe and quality food. Foodservices staff often work with unpackaged food, equipment and utensils and any mishandling can lead to serious health implications such as foodborne illnesses (McFarland, Sielaff, Rasco, & Smith, 2019) or food allergic reactions. Similar to food safety training practices such as using a thermometer correctly to ensure food has reached the appropriate temperature and proper handwashing techniques, managing food allergens on-site requires on-site training to understand

how food allergens will be stored, segregated, labelled and handled. Husain, Muda, Jamil, Hanafi & Rahman (2016) used hands-on demonstrations for delivering handwashing information and allow participants to self-practice on-site leading to a significant improvement in personal hygiene. Howton et al. (2016) suggested that a blended style of online learning (combination of delivery methods that best fit the needs of learner) and taught at middle school reading level is the most effective and desired delivery method in the study. Topics such as responding to a food allergic reaction, reading ingredient list and recognising symptoms of food allergic reactions were perceived as less important by the participating restaurants. Further research should be carried out to explore why such topics were considered less relevant as lack of training in such topics could lead to serious health implications.

Limitations

The very low response rate, small sample size (n=30) and self-reported practices remain major limitations of this study. The low response rate could also be due to the lack of time and demanding job requirements of foodservice staff. Although 500 restaurants were invited to participate in the study, only 30 restaurants participated and this may indicate significant bias. All participating restaurants indicated a food hygiene rating of 5 and may represent a motivated group of restaurants that are interested in food safety and food allergy topics. Thus, the results should be treated with caution as non-participating restaurants may have different training needs and interests. Since the study was based on self-reported practices, there is a possibility of social desirability bias from the participating restaurants. Much more work is needed in the evaluation of future food allergy training needs to develop effective training materials and delivery methods to ensure the safety of food allergic individuals.

Conclusion

This study identified the current food allergy training practices of restaurants and the type of training that appeals to them. The findings also reiterated important gaps in foodservices in relation to food allergy training. The main challenges in training were identified as lack of time to schedule training and high staff turnover. Self-paced online training that's certified by authorised authority may be an alternative to foodservice staff especially if restaurants are struggling with high staff turnover and time constraints. The study also offers insights into some of the key topics in food allergy training and the potential to incorporate the correct administration of adrenaline auto-injector in food allergy training. This may offer the potential to decrease the incidence of fatal food-induced anaphylactic reactions. A greater focus on the food allergy training needs of specific learners (e.g. chefs, kitchen staff, front service staff) could produce relevant findings to improve the training content and its approaches.

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